A REVISION OF THE DESCRIBED AUSTRALIAN AND NEW ZEALAND SPECIES OF THE FAMILY CLAMBIDAE (Coleoptera) WITH DESCRIPTION OF A NEW SPECIES

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ABSTRACT

ENDRÖDY-YOUNGA, S. 1973. A revision of the described Australian and New Zealand species of the Family Clambidae (Coleoptera) with description of a new species. *Rec. S. Aust. Mus.*, 17 (1): 1-10.

The type specimens of all species described under the family Clambidae were studied. In the present paper holotypes are confirmed and lectotypes designated where necessary. The systematic position of the species is clarified and a new species described.

INTRODUCTION

The taxonomic status of the family has changed remarkably since it was established by Thomson in 1859. Later authors of the last century placed the group under the family Silphidae or Anisotomidae (Leiodidae) until it was restored again as an independent family in the suborder Staphylinoidea. More recent work by Crowson (1960) resulted in the transfer of the family to the superfamily Eucinetoidea, suborder Polyphaga.

The members of this family can easily be recognized by the small size (0·7-2·0 mm) and convex shape, by the rolled up resting position when the clypeus is curled under the pronotum (most of the specimens are mounted in this position) and by the extremely enlarged hind coxal plate. Other characters are: head very broad, nearly as broad as pronotum, broadly rounded in front; pronotum large, convex, not deeply excised in front to accommodate a narrow head as with many Anisotomidae; scutellum triangular with sides about equal (in the similar shaped Cybocephalidae the scutellum is very broadly obtuse-angled); antennae consisting of two enlarged basal and two club segments with usually six funicular segments (four only in the Palaearctic genus *Loricaster* Muls. & Rey); tarsal formula 4-4-4; tibiae simple, not serrate in contrast to Anisotomidae.

I wish to express my gratitude to the colleagues who supplied material and enabled me to study the type specimens, notably the late Mr. H. M. Hale, Dr. E. D. Giles, Mr. G. F. Gross and Mr. N. McFarland of the South Australian Museum, Adelaide; Dr. J. W. Evans of the Australian Museum, Sydney; Mr. R. D. Pope and Miss C. M. F. von Hayek of the British Museum (Natural History), London.

SYSTEMATIC TREATMENT

Key to Genera

1. Front and basal margins of pronotum meet in a sharp angle, not forming laterally a straight or arcuate margin (Fig. 1 A). Eyes free at the side of the head (Fig. 1 A). Metasternum evenly convex for its whole length (Fig. 1 D). Abdomen of 6 segments
Calyptomerus Redtenbacher

Pronotum with distinct, straight or arcuate lateral margin (Fig. 1 B). Eyes completely enclosed in the disc of the head or only free behind (Fig. 1 B, C). Surface of metasternum sharply angled along the arcuate transversal crest (Fig. 1 E). Abdomen of 5 visible segments 2

2. Eyes framed in front by an extension of clypeus (temporal margin) but free behind (Fig. 1 C). Penis between bilobed or deeply emarginated parameres . . . . *Sphaerothorax* Endrödy-Younga

Eyes completely framed by the temporal margin of clypeus and divided into a dorsal and a ventral half. Parameres fused into a single plate with pointed, arcuate or emarginate apex
Clambus Fischer von Waldheim

Genus **CALYPTOMERUS** Redtenbacher, 1849

Calyptomerus Redtenbacher, 1849, Fauna Austriaca, Käfer, p. 18, 159; Endrödy-Younga, 1959, Opusc.Ent. 24: 84-85; 1961, Acta Zool.Acad.Sci.Hung., 7: 401-412.

Comazus Fairmaire & Laboulbene, 1854-56, Faune Ent.Fr.,Col., 1: 312, 328.

Small, convex, reddish brown with dense cover of long yellowish hairs. Body both in dorsal and in lateral view pear-shaped e.i. broadest and highest close to the shoulders. Head broad, clypeus broadly arcuate, in the middle finely emarginated. Eyes on the hind angle of head, free (Fig. 1 A) or shortly framed in front (the European *C. alpestris* Redtb.). Pronotum very broad and short, convex with sharp lateral angles (Fig. 1 A) instead of lateral margins. Metasternum gently convex between mesosternum and hind coxal plates (Fig. 1 D), not sharply

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angled to form a transversal crest in the middle of metasternum. Antennae 10 segmented with two enlarged basal and two club segments. Male genitalia consisting of two basally fused parameres, a pointed tongue-shaped penis, and an open, ring-shaped basal plate.

The genus comprises four species, described from the Palaearctic and Nearctic regions (Alaska). One of the species however is also known from South Africa (Cape Province), and the same species was recorded more recently from Tasmania, where it was described as *Clambus corylophoides* Lea.

1. **Calyptomerus dubius** (Marsham, 1802)
(Fig. 1 A, 1 D, 2 G)

Scaphidium dubium Marsham, 1802, Ent.Brit. 1: 234.

Comazus enshamensis Stephens, 1829, Ill.Brit. Ent.Mandib., 2: 184; Johnson 1966, Entomologist's mon. Mag., 101: 186.

Calyptomerus troglodytes Fauvel, 1861, Ann. Soc.Ent.Fr., (4) 1: 576.

Clambus corylophoides Lea, 1912, Proc.Lin.Soc. N.S.Wales, 36: 458 (*syn.nov.*).

Calyptomerus dubius Endrödy-Younga, 1959, Opusc.Ent. 24: 84-85; 1961, Acta Zool. Acad.Sci.Hung., 7: 411-412.

Location of types:

Scaphidium dubium Marsham, British Museum?

Comazus enshamensis Stephens: without locality, British Museum, London. Lectotype designed by C. Johnson (1966).

Calyptomerus troglodytes Fauvel: location of type unknown.

Clambus corylophoides Lea: Lectotype ♂ and two paratypes: Hobart, Tasmania, A. M. Lea, in South Australian Museum, Adelaide.

C. dubius is the smallest species of the genus. Sculpture of dorsal surface fine, pubescence comparatively long and less dense than in other species. Apex of elytra truncate. Head broad, antennal fossa as long as the temporal margin of clypeus between eyes and side angle of antennal fossa. Eyes situated on the hind angle of head and completely free (Fig. 1 A). Surface of head shiny, with fine punctures at basis of hairs. Hairs longer and less dense than in other species, slightly elevated and forwardly directed. Pronotum broad and short, as long as head; front and basal margins joining laterally in a sharp angle (Fig. 1 A). Pubescence similar to that of the head but directed from the centre of disc towards the margins. Elytra hardly longer than combined breadth, at apex commonly truncate; laterally and at the suture finely margined. Microsculpture around scutellum very fine, laterally and towards apex more distinct. Pubescence similar to that of the pronotum, directed from base to apex. Ventral side with stronger microsculpture, pubescence shorter and denser than on dorsal surface. Male genitalia 0·3 mm and 0·12 mm broad, stout in comparison to other species of the genus. Parameres narrow, hardly longer than penis (Fig. 2 G).

Length: 1·1-1·6 mm—*breadth*: 0·6-0·8 mm.

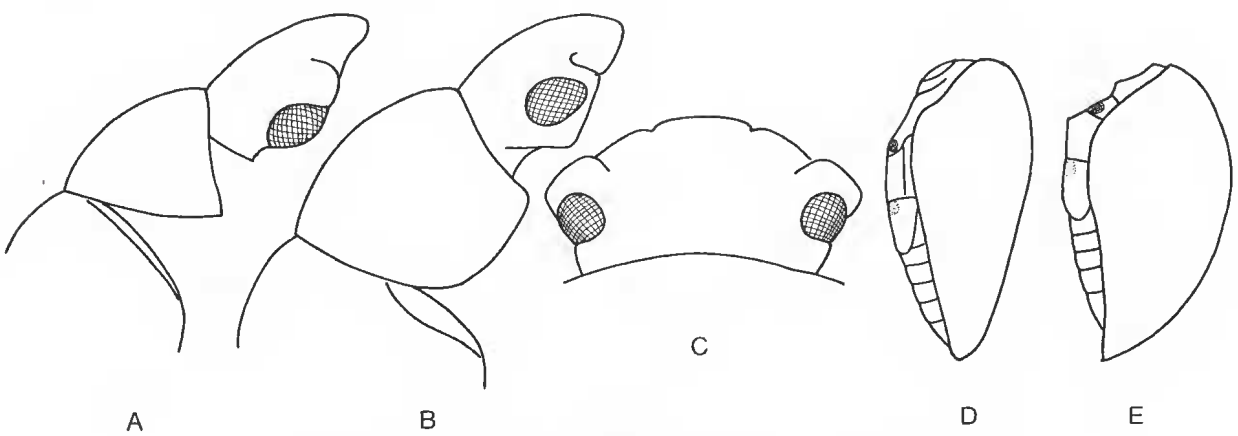

FIG. 1

A *Calyptomerus dubius* Marsh., head and pronotum in lateral view.
B *Clambus* sp. head and pronotum in lateral view.
C *Sphaerothorax suffusus* Broun: head, dorsal view.
D *Calyptomerus dubius* Marsh., body in lateral view (position of metasternum).
E *Clambus* sp., body in lateral view (position of metasternum).

Distribution: Europe (except northern areas), Morocco, South Africa (Cape Province), Tasmania. The origin of the South African and Tasmanian populations is not known; importation is likely but there is no evidence.

Three type specimens of *Clambus corylophoides* Lea in the South Australian Museum were examined. The male specimen, without head and pronotum, was dissected. The external characters as well as those of the male genitalia are identical with specimens of *Calyptomerus dubius* Marsh. from the Palaearctic and from South Africa; therefore *Clambus corylophoides* Lea has to be considered as a junior synonym of *Calyptomerus dubius* Marsh.

Genus **SPHAEROTHORAX** Endrödy-Younga, 1959

Sphaerothorax Endrödy-Younga, 1959, Opusc. Ent., 24: 88-89; 1960, Ann.Hist.Nat.Mus. Hung., 52: 241-244; 1965, Ann.Hist.Nat. Mus.Hung., 57: 259.

Type: *Clambus tasmani* Broun.

Morphologically this genus is intermediate between *Calyptomerus* and *Clambus*. It seems to be endemic to the Australian region.

Convex, especially in front; shiny reddish brown to almost black; some species with sparse and long setae on head, pronotum and elytra. Head narrower than pronotum, short, clypeus flatly arcuate in front. Antennal fossa far in front of eyes (like *Calyptomerus* but in contrast to *Clambus*). Eyes framed by temporal margin of clypeus but free at back, behind the temporal angle (Fig. 1 C). Pronotum longer and broader than head, as broad as elytra at shoulders. Lateral margin between front and hind angles distinct, more or less arcuate. Elytra convex, margined at the sides and from behind scutellum at suture. Metasternum large, with a sharp transverse crest about in the middle; hind part of metasternum horizontal, slightly convex transversally, front part almost vertically dropping to metasternum (Fig. 1 E). Mesosternum very small. Hind coxal plates large, much longer than hind part of metasternum. Abdomen five segmented. Antennae 10 segmented with two enlarged basal and two large club segments. Parameres bilobed, fused at base, penis varying in shape according to species.

The external characters of the species are not very marked and without comparative material it is difficult to distinguish the three species. The male genitalia however are very distinctive for each species.

Key to Species

1. Horizontal, hind part of metasternum with clear-cut, large punctures for whole width. Minute pubescence of head and pronotum more visible. Subsutural margins of elytra visible close behind scutellum. Penis between the large and rounded parameres appearing thin and strongly curved (Fig. 2 C, D). 1·4-1·6 mm. Tasmania
   1. *Sphaerothorax tierensis* (Blackburn)

   Horizontal, hind part of metasternum without clear and distinct punctation in the middle. Minute pubescence and punctation of head and pronotum not or hardly visible. Subsutural margins of elytra appear further behind scutellum. Paramere lobes pointed, penis not curved back towards the base 2

2. Larger, more elongate. Elytra behind shoulders semiparallel, in lateral view sutural line not evenly curved. Penis dilated before pointed apex (Fig. 2 E, F). 1·3-1·6 mm. Tasmania
   2. *Sphaerothorax tasmani* (Blackburn)

   Smaller, elytra both in dorsal and in lateral view evenly arcuate. Penis broad at base with a long and narrow apical process (Fig. 2 A, B). 1·2 mm. New Zealand
   3. *Sphaerothorax suffusus* (Broun)

1. **Sphaerothorax tierensis** (Blackburn, 1902) (Fig. 2 C-D)

Clambus tierensis Blackburn, 1902, Trans.Roy. Soc.S.Austr., 26: 289; Lea, 1912, Proc.Lin. Soc.N.S.Wales, 36: 459.

Clambus latens Lea, 1912, Proc.Lin.Soc.N.S. Wales, 36: 457 (*syn. nov.*).

Clambus pubiventris Lea, 1912, Proc.Lin.Soc. N.S.Wales, 36: 456 (*syn. nov.*).

Sphaerothorax tierensis Endrödy-Younga, 1960, Ann.Nat.Hist.Mus.Hung., 52: 242.

Location of types:

Clambus tierensis Blackburn: Lectotype ♂, Tasmania, British Museum (Natural History), London.

Clambus latens Lea: Lectotype ♂ and three further paratypes, Stonor, Tasmania (probably from tussocks), A. M. Lea, in South Australian Museum, Adelaide.

Clambus pubiventris Lea: Holotype ♂ and two further paratypes from the same locality, Mount Wellington, Tasmania, A. M. Lea, in South Australian Museum, Adelaide.

Elongate ovate, shiny dark brown with lighter transparent lateral lobes of pronotum and front margin of clypeus. Lighter coloured specimens not rare.

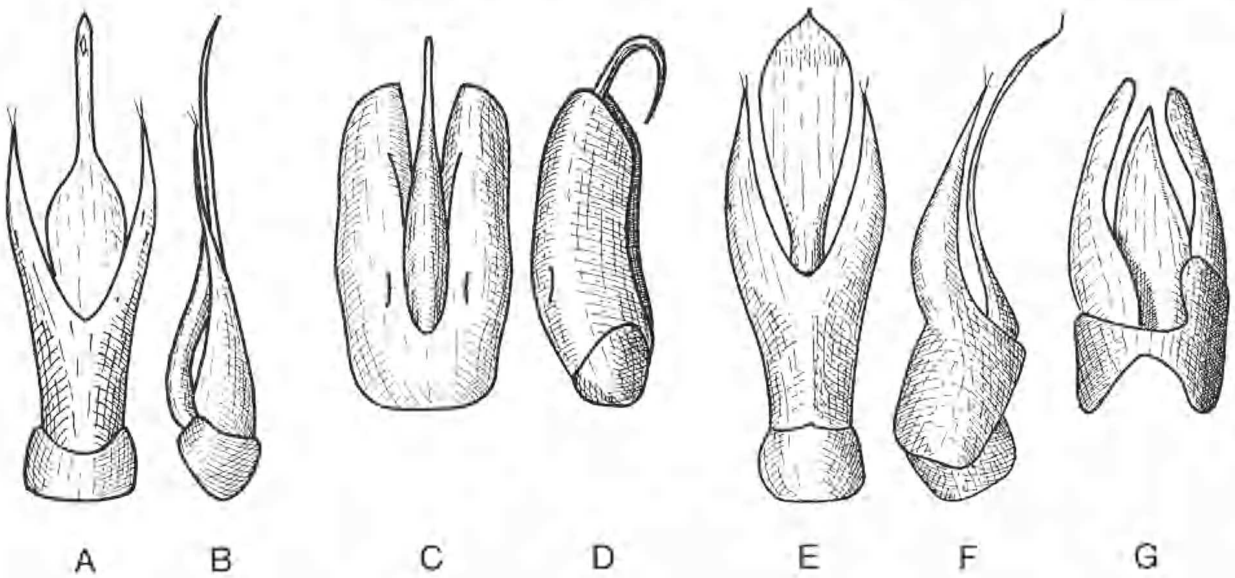

FIG. 2

A *Sphaerothorax suffusus* Broun, aedeagus in ventral view;
B same in lateral view.
C *Sphaerothorax tierensis* Blackb., aedeagus in ventral view;
D same in lateral view.
E *Sphaerothorax tasmani* Blackb., aedeagus in ventral view;
F same in lateral view.
G *Calyptomerus dubius* Marsh., aedeagus in ventral view.

Head broad and short, narrower and shorter than pronotum. Front margin of clypeus between the antennal fossa slightly trilobate, median lobe almost four times broader than one of the lateral ones; median lobe very flatly arcuate, finely emarginate in the middle. Pubescence of disc very short and fine with a few short additional setae. Elytra much longer than their combined breadth (46:38), evenly arcuate, both in dorsal and in lateral view. Subsutural striae of elytra appear close behind scutellum, there fine, slightly diverging from one another, behind the last two-fifths very distinct, parallel. Surface shiny with nearly evenly distributed and similar setae. Hind, horizontal part of metasternum with distinct, large punctures. Punctures in the middle set in two to three rows but more confused laterally. Inclined setae of transverse crest do not reach the hind margin of metasternum. Short and dense pubescence of abdomen collected into a tuft on anal sternite. Male genitalia 0·45 mm long and 0·2 mm broad (Fig. 2 C, D).

Length: 1·4-1·6 mm—*breadth*: 0·8-0·9 mm.

Distribution: Tasmania: Hobart, Stonor, Mount Wellington, New Norfolk.

The type specimens of *Clambus latens* Lea are paler than average *S. tierensis* but are obviously immature, the genitalia of the dissected specimen (lectotype) are feebly sclerotised. No specific difference could be found between the compared lectotypes, therefore *Clambus latens* Lea has to be considered as a junior synonym of *Sphaerothorax tierensis* (Blackburn).

The type specimens of *Clambus pubiventris* Lea are similar to *S. tierensis* (Blackb.). The aedeagus of the first specimen on the label (holotype) is visible without dissection and is identical with that of *S. tierensis*. The colour and setae of the elytra mentioned as specific characters by Lea in the original diagnosis are also characters of *S. tierensis*. The size of the type specimens is within the size range of *S. tierensis* and in the shape no distinct difference could be found. *Clambus pubiventris* Lea has to be considered as a junior synonym of *Sphaerothorax tierensis* (Blackb.). The three type specimens are mounted on the same label, the first from the left, marked as "typ" by Lea should be accepted as holotype. The specimen in the middle had no head and pronotum at the time of the present examination.

2. **Sphaerothorax tasmani** (Blackburn, 1902)
(Fig. 2 E-F)

Clambus tasmani Blackburn, 1902, Trans.Roy. Soc.S.Austr., 26: 288. Lea, 1912, Proc. Lin.Soc.N.S.Wales, 36: 458.

Clambus rufocastaneus Lea, 1912, Proc.Lin.Soc. N.S.Wales, 36: 457 (*syn. nov.*).

Sphaerothorax tasmani Endrödy-Younga, 1959, Opusc.Ent., 24: 89; 1960, Ann.Hist.Nat. Mus.Hung., 52: 243-244.

Location of types:

Clambus tasmani Blackburn: Lectotype ♂, Tasmania, in British Museum (Natural History), London.

Clambus rufocastaneus Lea: Lectotype ♂, Huon River, Tasmania (in tussocks), A. M. Lea, and one further paratype from the same locality, in South Australian Museum, Adelaide.

Elongate ovate, shiny reddish or chestnut brown, lateral lobes of pronotum and lateral margins of elytra (where body does not give a shade) lighter transparent. Setae of elytra numerous, very strong and long.

Head shorter and narrower than pronotum. Front margin of clypeus slightly trilobate, median lobe less than double width of a lateral lobe. Front margin of median lobe only very slightly arcuate, not emarginate in middle. Setae of clypeus longer than in *S. tierensis* but the fine pubescence even less visible. Pronotum convex, margin of lateral lobes finely arcuate, front and hind angles rounded but distinct. Surface very shiny with a pair of setae (on rubbed specimens only the basal punctures visible). Elytra longer than combined breadth (45:36). Sides in dorsal view nearly parallel behind shoulders. Subsutural striae distinct but shorter in front, first visible at the first two-fifths behind scutellum. Setae on disc and lateral margin similar, very long and strong. Horizontal, hind part of metasternum shiny, only punctate laterally close to the transverse crest. Recumbent setae of crest reach or surpass the hind margin of metasternum. Abdomen densely pubescent with a tuft of short hairs on the anal sternite. Male genitalia 0·5 mm long and 0·15 mm broad (Fig. 2 E, F).

Length: 1·4-1·6 mm—*breadth*: 0·8-0·9 mm.

Distribution: Tasmania: Launceston, Mount Wellington, Frankford.

The type specimens of *Clambus rufocastaneus* Lea are identical with specimens of *S. tasmani*, the male genitalia are also similar. The smaller size and lighter colour mentioned by Lea in the original diagnosis are within the variability of *S. tasmani*, and the subsutural striae are also characters of it. *Clambus rufocastaneus* Lea has to be considered as a junior synonym of *S. tasmani* (Blackb.).

3. **Sphaerothorax suffusus** (Broun, 1886) (Fig. 1 C, 2 A-B)

Clambus suffusus Broun, 1886, Man.N.Zeal. Col., 2: 762.

Sphaerothorax maori Endrödy-Younga, 1959, Opusc.Ent., 24: 90; 1960, Ann.Hist.Nat. Mus.Hung., 52: 243.

Sphaerothorax suffusus Endrödy-Younga, 1965, Ann.Hist.Nat.Mus.Hung., 57: 259.

Location of types:

Clambus suffusus Broun: Lectotype ♂, New Zealand, Broun Coll. in British Museum (Natural History), London.

Sphaerothorax maori Endrödy-Younga: Holotype ♂, Wellington Prov., New Zealand, and a paratype, Auckland, New Zealand, in British Museum (Natural History), London. A further paratype with the latter locality in Natural History Museum, Budapest.

Smaller, elongate ovate, shiny reddish brown with lighter sides of pronotum and elytra. Setae of elytra somewhat shorter and less numerous than in *S. tasmani*, but much longer than in *S. tierensis*.

Head much shorter and, also narrower than pronotum. Front margin of clypeus slightly trilobed, median lobe less than double the breadth of a lateral lobe; front margin of lobes more arcuate (Fig. 1 C). Setae of clypeus short, fine pubescence of disc hardly visible. Pronotum convex, margin of lateral lobes evenly arcuate between lateral angles. Surface shiny with a pair of long setae. Elytra only slightly longer than combined breadth (39:36). Sides in dorsal view, and sutural line in lateral view evenly arcuate. Subsutural striae of elytra first appear just before the second third of length. Setae numerous along lateral margins with some additional ones at shoulder and near apex. Ventral side similar to that of *S. tasmani*, but without the accumulation of hairs on anal sternite. Male genitalia 0·48 mm long and 0·1 mm broad (Fig. 2 A, B).

Length: 1·15-1·35 mm—*breadth*: 0·85-0·90 mm.

Distribution: New Zealand: Wellington, Auckland, Rotorua.

Genus **Clambus** Fischer von Waldheim, 1820

Clambus Fischer von Waldheim, 1820, Ent. Russ., 1: 20. Endrödy-Younga, 1960, Acta Zool.Acad.Sci.Hung., 6: 257-303.

Johnson, 1966, Handb.Ident.Brit.Ins., Clambidae, vol. 6, part 6 (*a*): 1-13 (Roy. Ent. Soc.,London).

Sternuchus Leconte, 1850, *in* Agassiz (ed.), "Lake Superior", p. 222.

In general appearance the genus is very homogeneous and most of the species can only be characterized by minute but usually very constant characters. The male genitalia (penis and the fused parameres) appear to be the best specific characters.

Small, between 0·9 and 1·8 mm, almost spherical to elongate ovate, semiglobular to pear-shaped, *i.e.*, flattened or narrower towards apex of elytra. Surface polished, shiny or sometimes with reticulate microsculpture, if latter, more distinct at apical part of elytra or on ventral surface. Pubescence very characteristic, varying from hardly visible fine hairs to a fairly dense vestiture of long setae. Normally unicoloured brown or black, usually with lighter transparent lateral margin of pronotum and elytra.

Head large and broad, clypeus broadly arcuate between temporal angles. Eyes entirely framed by temporal margin of clypeus (Fig. 1 B), divided into a dorsal and a ventral part. Hind angle of clypeus (temporal angle) situated beside or behind eyes. The pubescence of clypeus is characteristic and can be used for the grouping of species. Pronotum large and convex with distinct lateral margins. Lateral margin broadly and almost evenly arcuate, or straight between front and hind lateral angles; hind angle if distinct more flatly arcuate than front angle. Elytra longer, only exceptionally slightly shorter than combined breadth, uniformly convex or flattened or contracted towards apex. Metasternum, along a deeply bent transverse crest, divided into an almost vertical front and a horizontal hind part (Fig. 1 E). Metasternum very short, only accommodating median coxae. Abdomen 5-segmented. Antennae 10-segmented with two enlarged basal and two club segments. Penis dilated or tubular, parameres fused at base, there with an additional, usually less sclerotised, genital segment.

The genus is widely distributed in all temperate and tropical regions. Only four species are known from the Australian region.

SYSTEMATIC TREATMENT

Key to Species of the Australian Region

1. Head, pronotum and elytra apparently hairless in macroscopic view but minute hairs visible under strong magnification. Punctation on whole disc of elytra very fine. Horizontal, hind part of metasternum reduced to the deeply curved transverse crest at the middle (Fig. 3 A) 2

   Dorsal and ventral surface distinctly pubescent. Punctation of elytra fine at base but very distinct behind the middle. Horizontal, hind part of metasternum also quite long medially, transverse crest less curved (Fig. 1 E) 3

2. Temporal margin of clypeus almost straight in front of temporal angle (Fig. 3 B). Somewhat more elongate ovate, shoulders almost rectangular (Fig. 3 C). Apex of anal sternite simply excised with only one horizontal set of hairs (Fig. 3 D). Club of antennae broader ovate, last funicular segments broader than long. Penis simply curved (Fig. 3 F), apex triangular and shorter (Fig. 3 E), 1·3 mm. Southern Australia
   1. *Clambus myrmecophilus* Lea

   Temporal margin of clypeus slightly more arcuate in front of temporal angle. More broadly ovate, shoulder broadly rounded (Fig. 4 A). Excision of anal sternite double curved, larger area pubescent (Fig. 4 B). Club of antennae with semi-parallel sides, last funicular segments not broader than long. Apex of penis distinctly hooked (Fig. 4 D) and more elongately pointed (Fig. 4 C), 1·3 mm. New Zealand
   2. *Clambus bulla* spec. nov.

3. Pubescence more distinct, longer, hairs on elytra closer to each other than length of a single hair. Temporal margin of clypeus straight to the temporal angle. Penis truncate or flattened at apex (Fig. 5 A), 1·0-1·2 mm. Tasmania, South Australia
   3. *Clambus simsoni* Blackburn

   Pubescence not so distinct, shorter, hairs of elytra more spaced than length of a single hair. Temporal margin of clypeus slightly arcuate in front of temporal angle. Margins of penis evenly curved towards the rounded apex (Fig. 5 C), 0·9-0·95 mm. New Zealand, Southern Australia
   4. *Clambus domesticus* Broun

1. **Clambus myrmecophilus** Lea, 1910

(Fig. 3 A-F)

Clambus myrmecophilus Lea, 1910, Proc.Roy. Soc.Victoria, 23: 190.

Location of types:

Clambus myrmecophilus Lea: Holotype ♀, Portland, V., Inquiline, in South Australian Museum, Adelaide; Neoallotype ♂, South Australia, in author's collection.

Very convex, reddish brown, shiny, apparently glabrous, pubescence extremely fine.

Head large, convex, as large as pronotum between front angles of lateral lobes. Margin of clypeus evenly curved between temporal angles. Labrum very small. Eyes large on dorsal side, somewhat closer to temporal margin

than to antennal fossa; on ventral side only few (probably three) ocelli free (Fig. 3 B), a similar reduction of eyes is known also from other regions (c.f. *C. kaszabi* E.-Y. from North Africa). Temporal margin only slightly curved; temporal angles behind eyes (Fig. 3 B). Pronotum convex, lateral lobes with short straight lateral margins, front angles narrower than hind angles. Elytra very convex, only slightly longer than combined breadth (38:35); sides in dorsal view and sutural line in lateral view evenly arcuate. Humeral angle of elytra sharp, almost rectangular (Fig. 3 C). Subsutural striae very faint, only visible near apex. Apical angles sharply rectangular. Ventral surface shiny; pubescence as fine as on the dorsal surface but basal punctures of hairs more distinct. Transverse crest of metasternum very deeply bent in the middle, there touching the hind margin of the plate (Fig. 3 A). Hind coxal plate large, longer than horizontal part of metasternum laterally (Fig. 3 A). Apex of anal sternite simply and angularly excised with only a single line of fine and short yellowish hairs at base (Fig. 3 D). Antennae short, last two segments of funiculus (seventh and eighth segments) broader than long; club ovate. Penis 0·32 mm long and 0·04 mm broad, parallel to apex; apex triangular with tip rounded; in lateral view simply curved. Parameres 0·2 mm long and 0·06 mm broad, deeply and symmetrically excised, excision acute-angular, apices with very fine setae (Fig. 3 E, F). The description of male characters is based on a specimen from South Australia in the author's collection (Neoallotype).

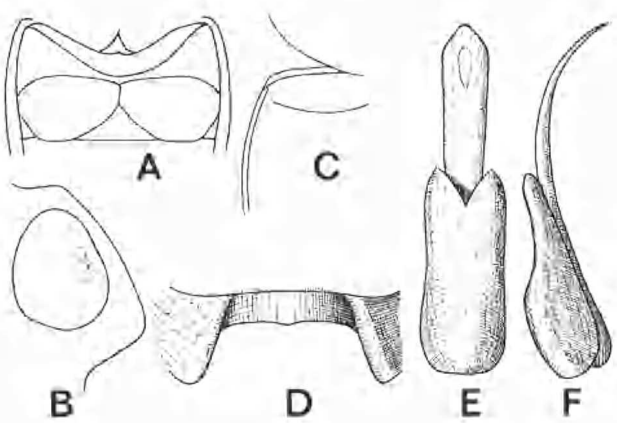

FIG. 3

A *Clambus myrmecophilus* Lea, metasternum and hind coxal plate;
B same, eye with temporal margin and angle in dorsal view with the position of ventral ocelli marked;
C same, humeral angle, semidorsal view;
D same, excision of anal sternite;
E same, aedeagus in ventral view;
F same, aedeagus in lateral view.

Length: 1·3 mm with head bent—*breadth*: 0·88 mm.

Distribution: Victoria, South Australia.

2. **Clambus bulla** Endrödy-Younga, n. sp.
(Fig. 4 A-D)

Holotype ♂: New Zealand, Broken Riv., 15.1.1908, Broun coll., 1922-482, in British Museum (Natural History) London.

Very similar to *C. myrmecophilus*. The diagnosis is restricted to characters which are different; others mentioned only under the former species are identical.

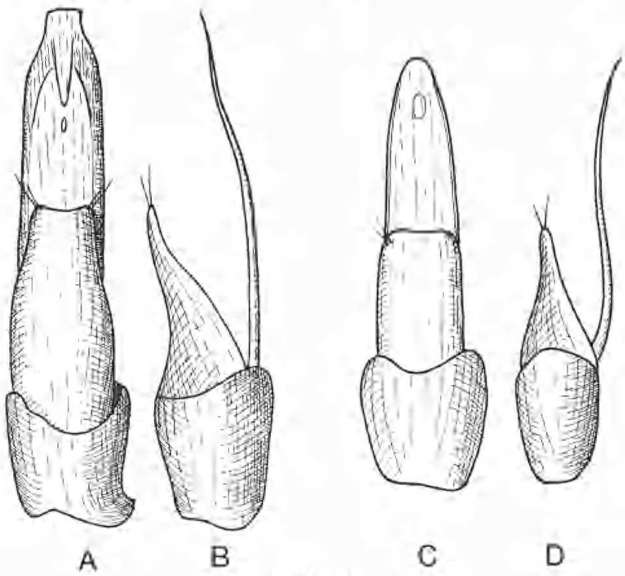

FIG. 4

A *Clambus bulla* spec.nov., humeral angle in semi-lateral view;
B same, excision of anal sternite;
C same, aedeagus in ventral view;
D same, aedeagus in lateral view.

More broadly ovate, temporal margin of clypeus somewhat more strongly bent (compare Fig. 3 B). Humeral angle of elytra rounded (Fig. 4 A). Elytra shorter, as long as combined breadth. Excision of anal sternite double-curved at base, here more densely pubescent (Fig. 4 B). Last two segments of funiculus (seventh and eighth segments of antennae) not broader than long; club of antennae more parallel at sides. Penis 0·4 mm long and 0·05 mm broad, apex more acute with tip rounded. Apex of penis hooked in lateral view. Fused parameres 0·28 mm long and 0·08 mm broad slightly dilated towards apex, apex symmetrically but less deeply excised, excision rectangular (Fig. 4 C, D).

Length: 1·3 mm, with head bent—*breadth*: 1·0 mm.

Distribution: New Zealand.

3. **Clambus simsoni** Blackburn, 1902

(Fig. 5 A-B)

Clambus simsoni Blackburn, 1902, Trans.Roy. Soc.S.Austr., 26: 288. Endrödy-Younga, 1959, Opusc.Ent., 24: 95; 1965, Ann.Hist. Nat.Mus.Hung., 57: 260-261.

Clambus flavipes Lea, 1912, Proc.Lin.Soc.N.S. Wales, 36: 456 (*syn. nov.*).

Location of types:

Clambus simsoni Blackb.: Lectotype ♂, Tasmania, Simson, Broun Coll. B.M. 1910-236, in British Museum (Natural History), London.

Clambus flavipes Lea: Holotype ♂, Gordon River, Tasmania, J. E. Philip, in South Australian Museum, Adelaide.

Light to dark brown with long shiny pubescence. Moderately convex. Front part of dorsal surface shiny, with only indistinct microsculpture and minute basal punctures of hairs, latter becoming very distinct in the hind third of elytra.

Head large, margin of clypeus broadly and evenly arcuate between temporal angles. Temporal margin almost straight between antennal fossa and temporal angle. Temporal angle situated beside eye, i.e., an imaginary line between temporal angles cuts through eyes. Eyes large both on dorsal and ventral side of head, equally close to antennal fossa and to temporal margin in front. Pubescence uniform, shorter than on elytra. Pronotum convex. Hind angle of lateral lobes broadly, front angle more narrowly, arcuate; lateral margin slightly curved. Pubescence as on head. Elytra longer than combined breadth (35:30), sides more strongly arcuate towards apex than behind shoulders. Humeral angle nearly rectangular or slightly obtuseangulate. Sutural line in lateral view more strongly arcuate behind scutellum than towards apex. Sutural striae fine, appearing only before middle of elytra. Pubescence long, more closely set than the length of hairs. Transverse crest of metasternum moderately bent in the middle, here also leaving a comparatively long piece of the horizontal part. Hind, horizontal part of the metasternum, hind coxal plates and abdominal segments evenly pubescent, as on elytra; basal punctures of hairs strongest on hind coxal plates. Legs and antennae reddish yellow. Penis 0·27 mm long and 0·04 mm broad, parallel, with apex contracted. Apex broadly truncate; in lateral view slightly curved to parameres, apical two-thirds straight. Fused parameres 0·15 mm long and 0·05 mm broad, contracted towards apex, apex excised with fine setae at points (Fig. 5 A, B). A specimen from S.E. Queensland has broader penis with less contracted apex.

Length: 1·0-1·2 mm with head bent—*breadth*: 0·75-0·85 mm.

Distribution: Tasmania and Eastern Australia.

The type specimen of *C. flavipes* is light brown and therefore its pubescence less apparent, though identical with that of darker specimens. Subsutural striae present, very fine as is general with this species. Male genitalia identical with that of the lectotype of *C. simsoni*. *Clambus flavipes* Lea has to be considered as a junior synonym of *Clambus simsoni* Blackb.

4. **Clambus domesticus** Broun, 1886

(Fig. 5 C-D)

Clambus domesticus Broun, 1886, Man.N.Zeal. Col., 3: 762. Endrödy-Younga, 1959, Opusc.Ent., 24: 96; 1965, Ann.Mus.Nat. Hist.Hung., 57: 259-260.

Clambus tropicus Blackburn, 1903, Trans.Roy. Soc.S.Austr. 27:97.

Location of types:

Clambus domesticus Broun: Lectotype ♂, New Zealand, Broun coll., B.M. 1922-482. (1350), in British Museum (Natural History), London.

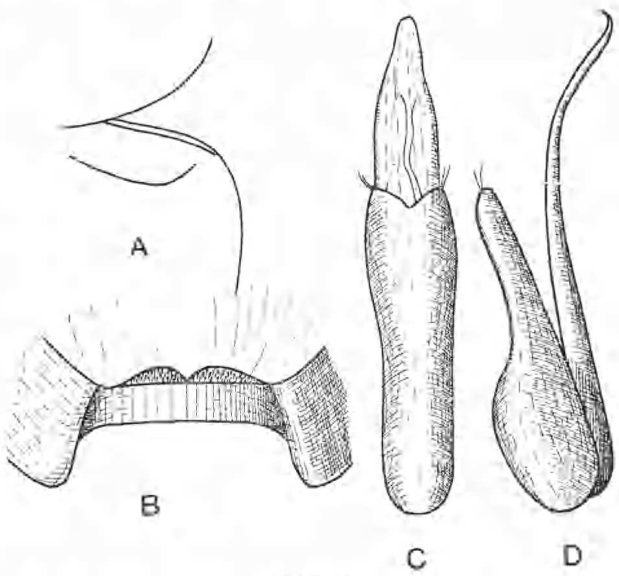

FIG. 5

A *Clambus simsoni* Blackb., aedeagus in ventral view;
B same, aedeagus in lateral view.
C *Clambus domesticus* Broun, aedeagus in ventral view;
D same, aedeagus in lateral view.

Clambus tropicus Blackb.: Lectotype ♀, Australia, Blackburn coll., B.M. 1910-236, in British Museum (Natural History), London.

This species is very similar and is apparently closely related to *C. simsoni*. Therefore the diagnosis hereunder is only extended to those characters which are different; others, mentioned only under *C. simsoni* are identical.

Smaller, pubescence much shorter, dark, less apparent. Colour, punctation and microsculpture similar. Temporal margin of clypeus distinctly arcuate in front of temporal angle, latter less obtuse. Pubescence denser in front of, than between the eyes. Pubescence of elytra similar to that between eyes, hairs wider apart than their length. Pubescence of ventral surface longer than that of dorsal surface, here very similar to *C. simsoni*. Penis 0·22 mm long and 0·04 mm broad, simply curved to the apex, in lateral view more smoothly arcuate. Fused parameres 0·14 mm long and 0·05 mm broad, truncate or slightly emarginate at apex, rounded apical angles with fine setae (Fig. C, D).

Length: 0·9-0·95 mm with head bent—*breadth*: 0·7 mm.

Distribution: New Zealand and Southern Australia.

Taxonomic status of other species described under the family Clambidae

Clambus semiflavus Lea, 1926, Proc.Roy.Soc.S. Austr., 50: 51.

Lectotype ♂: Northern Queensland, Blackburn coll., in South Australian Museum, Adelaide.

The species belongs to the genus *Cybocephalus* Erichson in the family Cybocephalidae. In that genus this species name is already preoccupied by *Cybocephalus semiflavus* Champion, 1925, Ent.Mo.Mag.: 263, from Kumaon, India. Lea's species has therefore to be transferred to the family Cybocephalidae under a *nomen novum*, for which I propose *Cybocephalus leai* nom.nov.

Clambus australiae Lea, 1926, Trans.Ent.Soc. London, 74: 280.

Lectotype ♂: West Australia, King George's Sound, C. Darwin coll., in South Australian Museum, Adelaide.

This species also belongs to *Cybocephalus* Erichson, Cybocephalidae, and becomes *Cybocephalus australiae* (Lea) nov. comb.

Clambus vestitus Broun, 1886, Man.N.Zeal.Col., 2: 762.

Lectotypus ♂: New Zealand, in British Museum (Natural History), London.

The species apparently belongs to the family Anisotomidae. The generic characters of the species required the establishment of a new genus and it was transferred to the family Anisotomidae (Leiodidae) under the name *Australiodes vestitus* (Broun) in Endrödy-Younga, 1960, Ann.Mus.Nat.Hist.Hung., 52: 239-240.

SUMMARY

Since 1886, when the second part of Broun's Manual of the New Zealand Coleoptera was published with the description of the first species of Clambidae in this region, 16 species have been described, all, with one exception, under the genus *Clambus*. The revision of these species was begun by the present author in 1959 when a genus, *Sphaerothorax*, was established for a distinctly different group of the family. Later, after a study of the type specimens of the British and South Australian Museums, a further genus, *Calyptomerus* Redth. is identified and the taxonomic status of all described species clarified. *Clambus bulla* is described as a new species.

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LIST OF SPECIES

Family CLAMBIDAE

Calyptomerus Redtenbacher

C. dubius Marsham
= *Clambus corylophoides* Lea

Sphaerothorax Endrödy-Younga

S. tierensis (Blackburn)
= *Clambus tierensis* Blackburn
= *Clambus latens* Lea
= *Clambus pubiventris* Lea

S. tasmani (Blackburn)
= *Clambus tasmani* Blackburn
= *Clambus rufocastaneus* Lea

S. suffusus (Broun)
= *Clambus suffusus* Broun
= *Sphaerothorax maori* Endrödy-Younga

Clambus Fischer von Waldheim

C. myrmecophilus Lea

C. bulla spec. nov.

C. sinuosi Blackburn
= *Clambus flavipes* Lea

C. domesticus Broun
= *Clambus tropicus* Blackburn

Family CYBOCEPHALIDAE

Cybocephalus Erichson

C. leai **nom. nov.**
= *Clambus semiflavus* Lea

C. australiae (Lea)
= *Clambus australiae* Lea

Family LEIODIDAE

Australiodes Endrödy-Younga

A. vestitus (Broun)
= *Clambus vestitus* Broun